

# INDEX OF AUTHORS

## VOLUME XVII

### TRANSACTIONS OF AMERICAN SOCIETY FOR STEEL TREATING

January, 1930—June, 1930

<b>A</b>		Jordan, Louis	273
Angell, W. R.	262	Junge, C. H.	383
<b>B</b>		<b>K</b>	
Batty, George	449	Keeney, Robert M.	615
<b>C</b>		Kelley, Floyd C.	593
Cammen, Leon	563	Keshian, H. G.	321
Carlin, J. E.	631	<b>L</b>	
<b>D</b>		Lawrence, Edward S.	784
Dornin, George A.	59	Lowry, E. J.	538
<b>E</b>		Luerssen, G. V.	161
Eaton, George M.	765	<b>M</b>	
Edwards, Junius D.	130	Marsh, Kirtland	275
Ellis, O. W.	471, 476	Merten, William J.	638
Ellsworth, A. C.	509	<b>P</b>	
<b>F</b>		Prosser, Roger D.	749
French, H. J.	646, 798	<b>R</b>	
Friauf, James B.	499	Rassbach, H. P.	570
Fry, Lawford H.	1	<b>S</b>	
Fulton, A. Oram	293	Sauveur, Albert	199, 410
<b>G</b>		Schwartz, H. A.	383
Gann, J. A.	292, 586	Shepherd, B. F.	90
Goss, Norman Philip	241	Sisco, F. T.	111
<b>H</b>		Sykes, W. P.	280, 509
Harris, James E.	282	<b>T</b>	
Hayes, Anson	527	Taylor, Cyril S.	130
Hoyt, Samuel L.	54	Trewin, C. S.	287
<b>J</b>		<b>W</b>	
Jameson, A. S.	81	Wickenden, Thomas H.	478
Johnson, H. H.	383	Winston, A. W.	292, 586

# INDEX OF SUBJECTS AND AUTHORS OF PAPERS

## VOLUME XVII

### TRANSACTIONS OF AMERICAN SOCIETY FOR STEEL TREATING

JANUARY, 1930—JUNE, 1930

#### A

Ac <sub>3</sub> and Above the Ar <sub>3</sub> Point; Properties of Some Structural Steels Hardened Below the— <i>W. R. Angell</i> .....	262
Alloying Element in Pearlitic Steels; Manganese as an— <i>A. Oram Fulton</i> .....	293
Alloying Element in Steel; Nickel As. An— <i>Thomas H. Wickenden</i> .....	478
Alloys; Constitution of Iron-Molybdenum— <i>W. P. Sykes</i> .....	280
Alloys; Constitution of Iron-Phosphorus— <i>Louis Jordan</i> .....	273
Alloys; Constitution of Magnesium-Copper— <i>J. A. Gann and A. W. Winston</i> .....	292
Alloys; Constitution of Magnesium-Zinc— <i>J. A. Gann and A. W. Winston</i> .....	586
Alloys; Temperature Measurements in Molten Aluminum and Its— <i>Kirtland Marsh</i> .....	275
Alloys Used as Bearing Metals; Constitution of Tin-Antimony-Copper— <i>O. W. Ellis</i> .....	476
Alloys Used As Bearing Metals; Structure of Tin-Antimony-Copper— <i>O. W. Ellis</i> .....	471
Aluminum and Its Alloys; Temperature Measurements in Molten— <i>Kirtland Marsh</i> .....	275
Annealing or Softening of Nitrided Steels by Chemical Decomposition of the Nitrides— <i>William J. Merten</i> .....	638
Antimony-Copper Alloys Used as Bearing Metals; Constitution of Tin— <i>O. W. Ellis</i> .....	476
Antimony-Copper Alloys Used as Bearing Metals; Structure of Tin— <i>O. W. Ellis</i> .....	471
Application of X-Rays to the Study of Plastic Deformation in Steel Wires and Molybdenum Ribbon— <i>Norman Philip Goss</i> .....	241
Ar <sub>3</sub> Point; Properties of Some Structural Steels Hardened Below the Ac <sub>3</sub> and Above the— <i>W. R. Angell</i> .....	262
Aspects of the Zinc Industry; Broad— <i>C. S. Trewin</i> .....	287
Austenite and Its Decomposition— <i>Albert Sauveur</i> .....	199

#### B

Basic Electric Steel; Melting Practice for Three Types of— <i>H. P. Rassbach</i> .....	570
Bearing Metals; Structure of Tin-Antimony-Copper Alloys Used as— <i>O. W. Ellis</i> .....	476
Bearing Metals; Structure of Tin-Antimony-Copper Alloys Used as— <i>O. W. Ellis</i> .....	471
Behavior of Carbon Tool Steel on Quenching— <i>G. V. Luerssen</i> .....	161
Blistering of Metal During Processing; Conditions Necessary for— <i>Anson Hayes</i> .....	527
Broad Aspects of the Zinc Industry— <i>C. S. Trewin</i> .....	287

#### C

Cable and Recommended Practice for Its Use; Wire Rope or .....	136
Campbell Memorial Lecture—1929 .....	410
Carbide; Preparation of Microsections of Tungsten— <i>Samuel L. Hoyt</i> .....	54
Carbide Tools; Tungsten— <i>Roger D. Prosser</i> .....	749
Carbon Tool Steel on Quenching; Behavior of— <i>G. V. Luerssen</i> .....	161

	Carburization; Mechanism of .....	588
	Case; Suggested Methods of Reporting on the Nitrided Steel— <i>George M. Eaton</i> .....	765
	Cast Iron; Constitution of Steel and— <i>F. T. Sisco</i> .....	111
	Cast Iron; High Strength— <i>E. J. Lowry</i> .....	538
	Cast Iron; Graphitization of Prequenched White— <i>H. A. Schwartz, H. H. Johnson and C. H. Junge</i> .....	383
	Castings; Production of Electric Steel for— <i>George Batty</i> .....	449
	Characteristics of Tool Steel; Inherent Hardenability— <i>B. F. Shepherd</i> ..	90
	Chemical Decomposition of the Nitrides; Annealing or Softening of Nitrided Steels by— <i>William J. Merten</i> .....	638
	Cold Working; On the Distribution of Hardness Produced by— <i>W. P. Sykes and A. C. Ellsworth</i> .....	509
	Comment and Discussion .....	594, 728
	Committee Releases; Recommended Practice .....	130, 273, 471, 586
	Conditions Necessary for Blistering of Metal During Processing— <i>Anson Hayes</i> .....	527
	Constants of Lead; Physical— <i>James E. Harris</i> .....	282
	Constants of Magnesium; Physical— <i>Cyril S. Taylor and Junius D. Edwards</i> .....	130
	Constitution of Iron-Molybdenum Alloys— <i>W. P. Sykes</i> .....	280
	Constitution of Iron-Phosphorus Alloys— <i>Louis Jordan</i> .....	273
	Constitution of Magnesium-Copper Alloys— <i>J. A. Gann and A. W. Winston</i> .....	292
	Constitution of Magnesium-Zinc Alloys— <i>J. A. Gann and A. W. Winston</i> ..	586
	Constitution of Steel and Cast Iron— <i>F. T. Sisco</i> .....	111
	Constitution of the Tin-Antimony-Copper Alloys Used as Bearing Metals— <i>O. W. Ellis</i> .....	476
	Copper Alloys; Constitution of Magnesium— <i>J. A. Gann and A. W. Winston</i> ..	292
	Crystal Structure of an Iron Phosphide— <i>James B. Friauf</i> .....	499

## D

	Decomposition; Austenite and Its— <i>Albert Sauveur</i> .....	199
	Decomposition of the Nitrides; Annealing or Softening of Nitrided Steels by Chemical— <i>William J. Merten</i> .....	638
	Deformation in Steel Wires and Molybdenum Ribbon; Application of X-Rays to the Study of Plastic— <i>Norman Philip Goss</i> .....	241
	Dendritic Steel— <i>H. G. Keshian</i> .....	321
	Developments in Normalizing Sheet Steel; Recent— <i>Edward S. Lawrence</i> ..	784
	Discussion; Comment and .....	594, 728
	Distribution of Hardness Produced by Cold Working; On the— <i>W. P. Sykes and A. C. Ellsworth</i> .....	509
	Duplex Practice— <i>J. E. Carlin</i> .....	631

## E

	Economics of Heat Treating— <i>Robert M. Keeney</i> .....	615
	Electric Steel; Melting Practice for Three Types of Basic— <i>H. P. Rassbach</i> .....	570
	Electric Steel for Castings; Production of— <i>George Batty</i> .....	449
	Element in Pearlitic Steels; Manganese as an Alloying— <i>A. Oram Fulton</i> ..	293
	Element in Steel; Nickel as an Alloying— <i>Thomas H. Wickenden</i> .....	478
	Elevated Temperatures; Steel at— <i>Albert Sauveur</i> .....	410
	Engineering Index .....	144, 306, 485, 596, 734, 889
	Expansion of S.A.E. Steels; Linear— <i>Floyd C. Kelley</i> .....	593

## F

	Forgings; Locomotive— <i>Lawford H. Fry</i> .....	1
	Forgings; Microscopic Study of Improperly Heated— <i>A. S. Jameson</i> .....	81

## G

	Graphitization of Prequenched White Cast Iron— <i>H. A. Schwartz, H. H. Johnson and C. H. Junge</i> .....	383
--	---	-----

## H

Hardenability Characteristics of Tool Steel; Inherent— <i>B. F. Shepherd</i> .....	90
Hardened Below the $A_{c3}$ and Above the $A_{r3}$ Point; Properties of Some Structural Steels— <i>W. R. Angell</i> .....	262
Hardness Produced by Cold Working; On the Distribution of— <i>W. P. Sykes and A. C. Ellsworth</i> .....	509
Heat Treating; Economics of— <i>Robert M. Keeney</i> .....	615
Heuristic Theory of the Structure of Steel— <i>Leon Cammen</i> .....	563
High Strength Cast Iron— <i>E. J. Lowry</i> .....	538

## I

Improperly Heated Forgings; Microscopic Study of— <i>A. S. Jameson</i> .....	81
Index; Engineering.....	144, 306, 485, 596, 734, 889
Inherent Hardenability Characteristics of Tool Steel— <i>B. F. Shepherd</i> .....	90
Iron; Constitution of Steel and Cast— <i>F. T. Sisco</i> .....	111
Iron; Graphitization of Prequenched White Cast— <i>H. A. Schwartz, H. H. Johnson and C. H. Junge</i> .....	383
Iron; High Strength Cast— <i>E. J. Lowry</i> .....	538
Iron-Molybdenum Alloys; Constitution of— <i>W. P. Sykes</i> .....	280
Iron Phosphide; Crystal Structure of an— <i>James B. Frieduf</i> .....	499
Iron-Phosphorus Alloys; Constitution of— <i>Louis Jordan</i> .....	273

## L

Lead; Physical Constants of— <i>James E. Harris</i> .....	282
Lecture; Campbell Memorial—1929.....	410
Linear Expansion of S.A.E. Steels— <i>Floyd C. Kelley</i> .....	593
Locomotive Forgings— <i>Lawford H. Fry</i> .....	1

## M

Magnesium; Physical Constants of— <i>Cyril S. Taylor and Junius D. Edwards</i> .....	130
Magnesium-Copper Alloys; Constitution of— <i>J. A. Gann and A. W. Winston</i> .....	292
Magnesium-Zinc Alloys; Constitution of— <i>J. A. Gann and A. W. Winston</i> .....	586
Manganese as an Alloying Element in Pearlitic Steels— <i>A. Oram Fulton</i> .....	293
Measurements in Molten Aluminum and Its Alloys; Temperature— <i>Kirtland Marsh</i> .....	275
Mechanical Properties of Some Structural Steels Hardened Below the $A_{c3}$ and Above the $A_{r3}$ Point— <i>W. R. Angell</i> .....	262
Mechanism of Carburization.....	588
Melting Practice for Three Types of Basic Electric Steel— <i>H. P. Rassbach</i> .....	570
Memorial Lecture; Campbell—1929.....	410
Metal During Processing; Conditions Necessary for Blistering of— <i>Anson Hayes</i> .....	527
Metals; Constitution of Tin-Antimony-Copper Alloys Used as Bearing— <i>O. W. Ellis</i> .....	476
Methods of Reporting on the Nitrided Steel Case; Suggested— <i>George M. Eaton</i> .....	765
Microscopic Study of Improperly Heated Forgings— <i>A. S. Jameson</i> .....	81
Microsections of Tungsten Carbide; Preparation of— <i>Samuel L. Hoyt</i> ....	54
Molten Aluminum and Its Alloys; Temperature Measurements in— <i>Kirtland Marsh</i> .....	275
Molybdenum Alloys; Constitution of Iron— <i>W. P. Sykes</i> .....	280
Molybdenum Ribbon; Application of X-Rays to the Study of Plastic Deformation in Steel Wires and— <i>Norman Philip Goss</i> .....	241

## N

Necessary for Blistering of Metal During Processing; Conditions— <i>Anson Hayes</i> .....	527
News of the Society.....	158, 607, 747, 904
Nickel As An Alloying Element in Steel— <i>Thomas H. Wickenden</i> .....	478



Nitrided Steel Case; Suggested Methods of Reporting on the— <i>George M. Eaton</i> .....	765
Nitrided Steels by Chemical Decomposition of the Nitrides; Annealing or Softening of— <i>William J. Merten</i> .....	638
Nitrides; Annealing or Softening of Nitrided Steels by Chemical Decomposition of the— <i>William J. Merten</i> .....	638
Normalizing Sheet Steel; Recent Developments in— <i>Edward S. Lawrence</i> .....	784

## P

Patents; Reviews of Recent .....	302, 496, 731, 901
Pearlitic Steels; Manganese as an Alloying Element in— <i>A. Oram Fulton</i> .....	293
Phosphide; Crystal Structure of an Iron— <i>James B. Friauf</i> .....	499
Phosphorus Alloys; Constitution of Iron— <i>Louis Jordan</i> .....	273
Physical Constants of Lead— <i>James E. Harris</i> .....	282
Physical Constants of Magnesium— <i>Cyril S. Taylor and Junius D. Edwards</i> .....	130
Plastic Deformation in Steel Wires and Molybdenum Ribbon; Applications of X-Rays to the Study of— <i>Norman Philip Goss</i> .....	241
Practice; Duplex— <i>J. E. Carlin</i> .....	631
Practice Committee Releases; Recommended .....	130, 273, 471, 586
Practice for Three Types of Basic Electric Steel; Melting— <i>H. P. Rassbach</i> .....	570
Preparation of Microsections of Tungsten Carbide— <i>Samuel L. Hoyt</i> .....	54
Prequenched White Cast Iron; Graphitization of— <i>H. A. Schwartz, H. H. Johnson and C. H. Junge</i> .....	383
Processing; Conditions Necessary for Blistering of Metal During— <i>Anson Hayes</i> .....	527
Produced by Cold Working; On the Distribution of Hardness— <i>W. P. Sykes and A. C. Ellsworth</i> .....	509
Production of Electric Steel for Castings— <i>George Batty</i> .....	449
Products and on the Process Itself; Slags Produced in Steel Making—Their Effects on the— <i>George A. Dornin</i> .....	59
Properties of Some Structural Steels Hardened Below the $A_{c3}$ and Above the $A_{r3}$ Point— <i>W. R. Angell</i> .....	262

## Q

Quenching; Behavior of Carbon Tool Steel on— <i>G. V. Luerssen</i> .....	161
Quenching of Steels; Study of the— <i>H. J. French</i> .....	646, 798

## R

Recent Developments in Normalizing Sheet Steel— <i>Edward S. Lawrence</i> .....	784
Recent Patents; Reviews of .....	302, 496, 731, 901
Recommended Practice Committee Releases .....	130, 273, 471, 586
Reporting on the Nitrided Steel Case; Suggested Methods of— <i>George M. Eaton</i> .....	765
Reviews of Recent Patents .....	302, 496, 731, 901
Ribbon; Application of X-Rays to the Study of Plastic Deformation in Steel Wires and Molybdenum— <i>Norman Philip Goss</i> .....	241
Rope or Cable and Recommended Practice for Its Use; Wire .....	136

## S

S.A.E. Steels; Linear Expansion of— <i>Floyd C. Kelley</i> .....	593
Sheet Steel; Recent Developments in Normalizing— <i>Edward S. Lawrence</i> .....	784
Slags Produced in Steel Making—Their Effects on the Product and on the Process Itself— <i>George A. Dornin</i> .....	59
Society; News of the .....	158, 607, 747, 904
Softening of Nitrided Steels by Chemical Decomposition of the Nitrides; Annealing or— <i>William J. Merten</i> .....	638
Steel; Dendritic— <i>H. G. Keshian</i> .....	321
Steel; Heuristic Theory of the Structure of— <i>Leon Cammen</i> .....	563
Steel; Inherent Hardenability Characteristics of Tool— <i>B. F. Shepherd</i> ..	90
Steel; Melting Practice for Three Types of Basic Electric— <i>H. P. Rassbach</i> .....	570

Steel; Nickel As An Alloying Element in— <i>Thomas H. Wickenden</i> .....	478
Steel; Recent Developments in Normalizing Sheet— <i>Edward S. Lawrence</i> .....	784
Steel and Cast Iron; Constitution of— <i>F. T. Sisco</i> .....	111
Steel At Elevated Temperatures— <i>Albert Sauveur</i> .....	410
Steel Case; Suggested Methods of Reporting on the Nitrided— <i>George M. Eaton</i> .....	765
Steel for Castings; Production of Electric— <i>George Batty</i> .....	449
Steel Making—Their Effects on the Products and on the Process Itself; Slags Produced in— <i>George A. Dornin</i> .....	59
Steel on Quenching; Behavior of Carbon Tool— <i>G. V. Luerksen</i> .....	161
Steel Wires and Molybdenum Ribbon; Application of X-Rays to the Study of Plastic Deformation in— <i>Norman Philip Goss</i> .....	241
Steels; Chemical Decomposition of the Nitrides; Annealing or Softening of Nitrided— <i>William J. Merten</i> .....	638
Steels; Linear Expansion of S.A.E.— <i>Floyd C. Kelley</i> .....	593
Steels; Manganese as an Alloying Element in Pearlitic— <i>A. Oram Fulton</i> .....	293
Steels; Study of the Quenching of— <i>H. J. French</i> .....	646, 798
Steels Hardened Below the $A_{c_2}$ and Above the $A_{r_2}$ Point; Properties of Some Structural— <i>W. R. Angell</i> .....	262
Structural Steels Hardened Below the $A_{c_2}$ and Above the $A_{r_2}$ Point; Properties of Some— <i>W. R. Angell</i> .....	262
Structure of an Iron Phosphide; Crystal— <i>James B. Friauf</i> .....	499
Structure of Tin-Antimony-Copper Alloys Used As Bearing Metals— <i>O. W. Ellis</i> .....	471
Structure of Steel; Heuristic Theory of the— <i>Leon Cammen</i> .....	563
Study of Improperly Heated Forgings; Microscopic— <i>A. S. Jameson</i> ....	81
Study of the Quenching of Steels— <i>H. J. French</i> .....	646, 798
Suggested Methods of Reporting on the Nitrided Steel Case— <i>George M. Eaton</i> .....	765

## T

Temperature Measurements in Molten Aluminum and Its Alloys— <i>Kirtland Marsh</i> .....	275
Temperatures; Steel at Elevated— <i>Albert Sauveur</i> .....	410
Theory of the Structure of Steel; Heuristic— <i>Leon Cammen</i> .....	563
Three Types of Basic Electric Steel; Melting Practice for— <i>H. P. Rassbach</i> .....	570
Tin-Antimony-Copper Alloys Used as Bearing Metals; Constitution of— <i>O. W. Ellis</i> .....	476
Tin-Antimony-Copper Alloys Used As Bearing Metals; Structure of— <i>O. W. Ellis</i> .....	471
Tool Steel; Inherent Hardenability Characteristics of— <i>B. F. Shepherd</i> .....	90
Tool Steel on Quenching; Behavior of Carbon— <i>G. V. Luerksen</i> .....	161
Tools; Tungsten Carbide— <i>Roger D. Prosser</i> .....	749
Treating; Economics of Heat— <i>Robert M. Keeney</i> .....	615
Tungsten Carbide; Preparation of Microsections of— <i>Samuel L. Hoyt</i> ....	54
Tungsten Carbide Tools— <i>Roger D. Prosser</i> .....	749
Types of Basic Electric Steel; Melting Practice for Three— <i>H. P. Rassbach</i> .....	570

## W

White Cast Iron; Graphitization of Prequenched— <i>H. A. Schwartz, H. H. Johnson and C. H. Junge</i> .....	383
Wire Rope or Cable and Recommended Practice for Its Use.....	136
Working; On the Distribution of Hardness Produced by Cold— <i>W. P. Sykes and A. C. Ellsworth</i> .....	509

## X

X-Rays to the Study of Plastic Deformation in Steel Wires and Molybdenum Ribbon; Application of— <i>Norman Philip Goss</i> .....	241
--	-----

## Z

Zinc Alloys; Constitution of Magnesium— <i>J. A. Gann and A. W. Winston</i> .....	586
Zinc Industry; Broad Aspects of the— <i>C. S. Trewin</i> .....	287

478  
784  
111  
410

765  
449

59  
161

241

638  
593  
293  
798

262

262  
499

471  
563  
81  
798

765

275  
410  
563

570

476

471  
90  
161  
749  
615  
54  
749

570

383  
136

509

241

586  
287